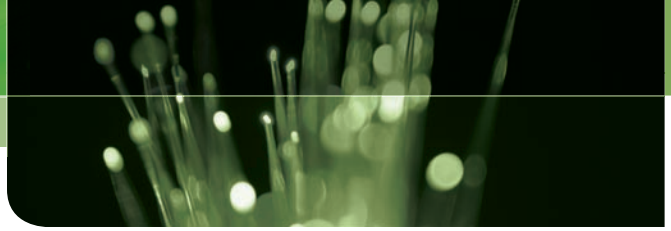

# 3M™ No Polish LC/APC Connector SM, Angle Splice, 250/900 µm 8830-APC/AS

## Instructions

*January 2009*
*78-8140-3691-5-A*

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## Safety Precautions

### Protective Eyewear

**⚠ CAUTION**

Safety glasses should be worn when handling chemicals and cleaving the optical fiber.

### Chemical Precautions

**⚠ WARNING**

Storage, use and disposal of isopropyl alcohol should be per your company health, safety and environmental instructions. Refer to material safety data sheet for health hazards, safe handling, proper use and control measures.

**⚠ CAUTION**

Product contains phenylmethyl silicone (63148-58-3), hydrophobic silica (68611-44-9) and may cause minimal eye irritation. Avoid contact with eyes and wash hands before eating or smoking. Upon eye contact, immediately flush eyes with water while holding eyelids open and continue flushing for ten minutes. Contact a physician. Upon skin contact, wash with soap and water. Product Information: Material Safety Data Sheet or 3M Company, St. Paul MN, 55144-1000, (651) 733-1110 Operator 55

### Bare Fiber Handling

**⚠ CAUTION**

Cleaved glass fibers are sharp and can pierce the skin. Use tweezers when handling shards and dispose of them properly per your company health and safety instructions.

### Fiber/Cable Handling

**⚠ CAUTION**

Optical fiber can be damaged by excessive tensile, compressive and bending forces. Consult the manufactures' specifications for proper handling instructions.

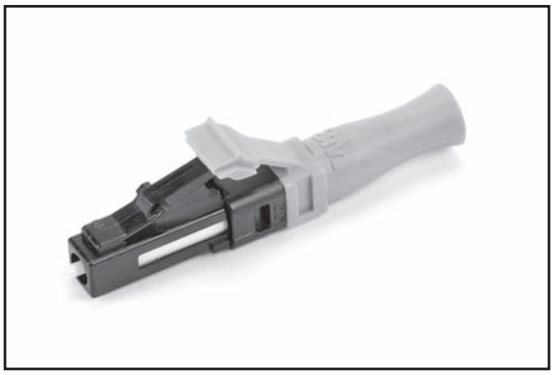
### Laser Safety

**⚠ CAUTION**

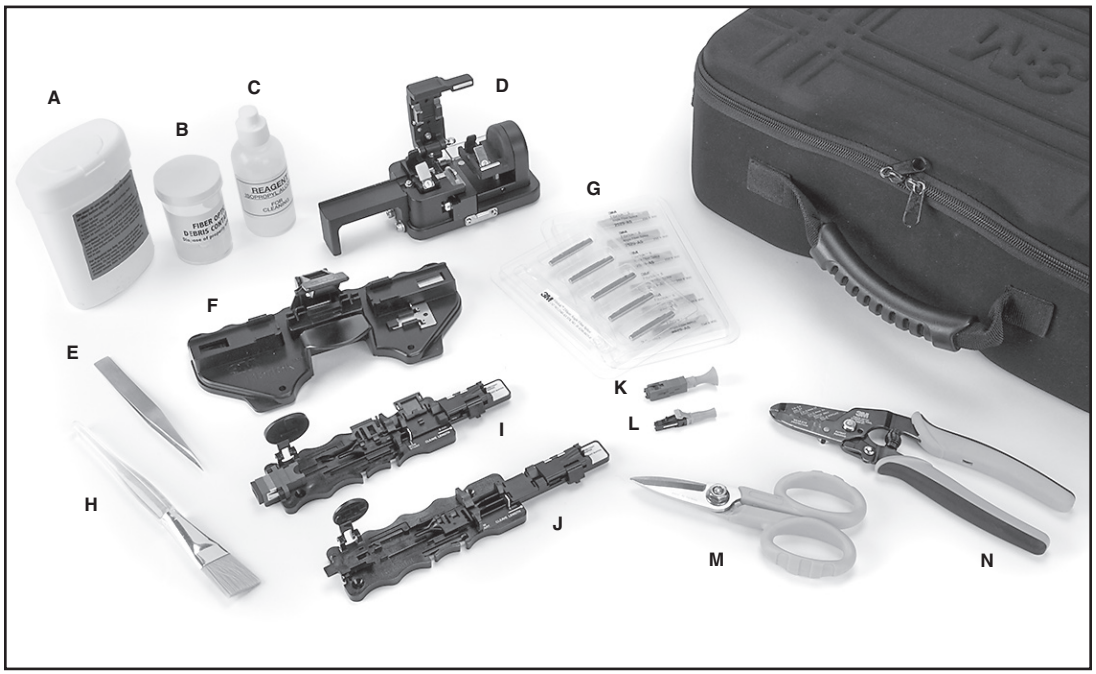
Take the proper precautions when working with optical fiber because invisible laser light may be present. The principal laser hazard when working with fiber optics is injury to the eye. Never look directly into the fiber or connector using the naked eye or a microscope.

# 1.0 Summary

1.1 3M™ No Polish Connector 8830-APC/AS terminates 250 µm or 900 µm single fibers with LC/APC interface and angle splice for superior optical return loss performance.

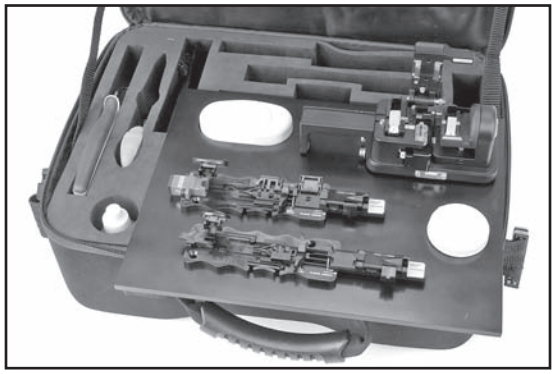


1.2 Required tools, which are available in the 3M™ Fiber Optic Angle Cleave Kit 2565.




a. Lint-free cloths
b. Fiber shard container
c. Isopropyl alcohol
d. 3M™ Fiber Optic Angle Cleaver 2535
e. Tweezers
f. 3M™ Fibrlok™ Angle Splice Assembly Tool
g. 3M™ Fibrlok™ Angle Splices
h. Cleaning brush
i. 3M™ NPC Assembly Tool 8835-AT/Fiber holder
j. 3M™ NPC Assembly Tool 8865-AT/Fiber holder
k. 3M™ NPC SC Connector, 880-APC/AS
l. 3M™ NPC LC Connector, 8830-APC/AS
m. 3M™ Kevlar Snips 6365-KS
n. 3M™ Fiber Stripper 6365-ST

1.3 For situations where a suitable work area is not available, the case and plastic plate, which are included in the 3M™ Fiber Optic Angle Cleave Kit 2565, can create a work surface. The case can be set on level ground, on a vehicle, or hung by the hook and shoulder strap.



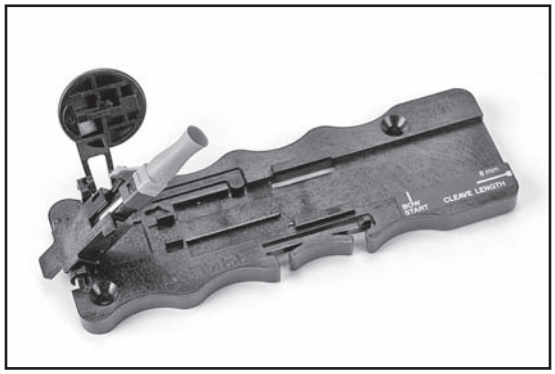
1.4 Add one full bottle (1.8 fl. oz./53 ml.) of 99% pure isopropyl alcohol into lint-free cloth container to pre-moisten wipes.

## 2.0 Connector Preparation

2.1 Prior to each termination, clean all tools, including fiber holder, with a lint-free cloth and reagent-grade isopropyl alcohol.

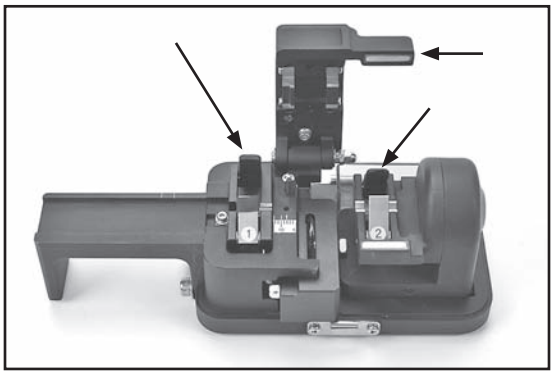
2.2 Carefully remove connector body from the bag. Remove the dust caps from the front and rear of the connector body.

2.3 Open the actuator button on the assembly tool base. Insert connector into receptacle in the tool with white actuation cap facing left, pushing forward until it clicks.

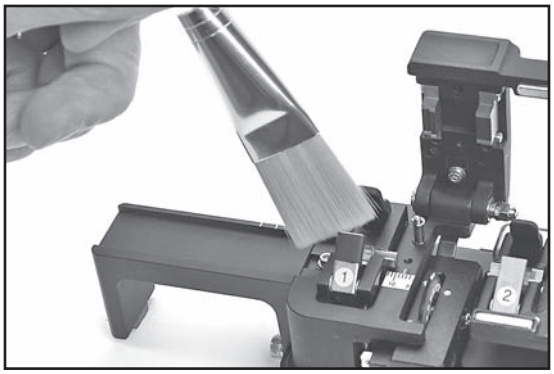



## 3.0 Fiber Preparation

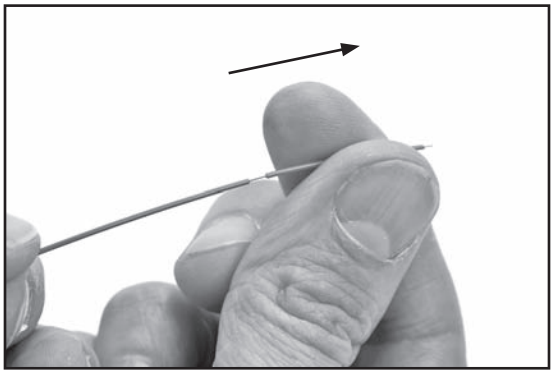
3.1 Open all three angle cleaver clamps and levers.



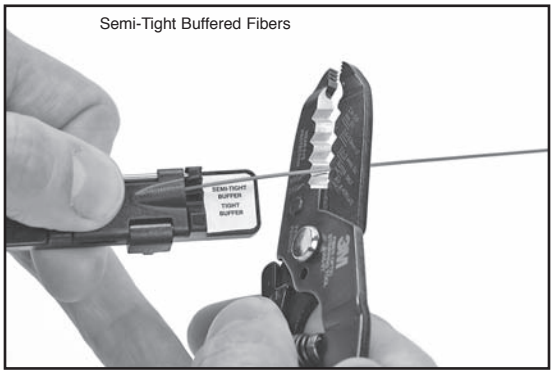
3.2 Carefully clean the cleaver clamps using a small brush.



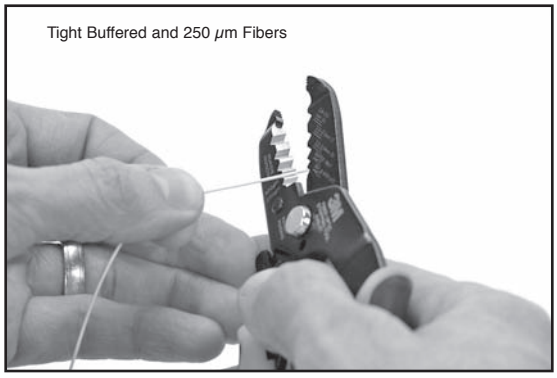
3.3 For 900 µm buffer fiber, cut the buffer. If the 900 µm slides easily from the fiber it is loose tube or semi-tight buffered fiber.



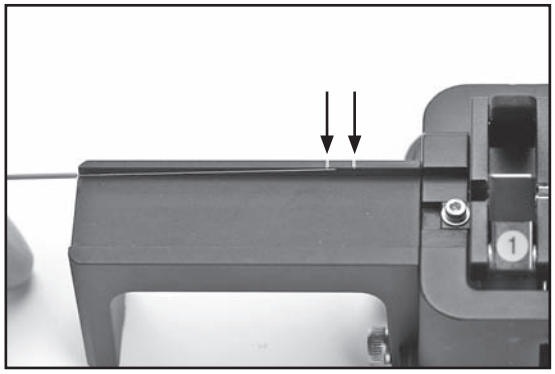
In this instance, use the fiber holder's clamp to prohibit the buffer from moving or stretching during the stripping process. Place the fiber into the fiber holder groove, labeled "semi-tight", with the fiber to be stripped protruding from the back of the holder. Close the clamp and proceed to strip and clean the fiber. Once complete, remove the fiber from the holder. If the 250 µm fiber still moves inside the 900 um buffer after it is clamped in the "semi-tight" groove, then the connector must be installed on the 250 µm fiber. Strip at least eight inches (203 mm) of the 900 µm buffer and complete the installation.



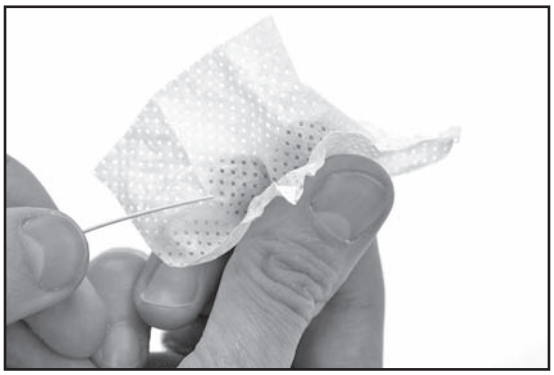

3.4 For all fibers, strip the 900 µm and 250 µm coatings exposing glass for 1.67" to 1.77" (42.5 mm to 45 mm).



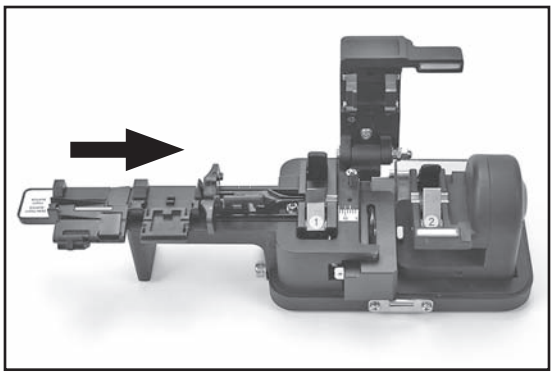

3.5 To verify the correct strip length, use the white marks on the left side of the cleaver. Align the coating edge to the left edge of the cleaver and the fiber tip should be between the two white lines.



3.6 Clean fiber with alcohol and lint-free cloth.

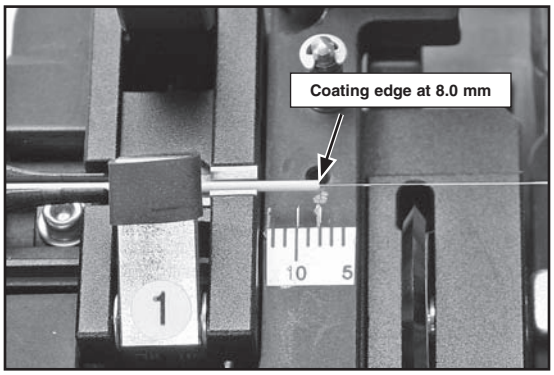


3.7 With the two covers and clamp open, place the assembly tool fiber holder onto the cleaver. Push the holder toward the cleaver blade until it stops.

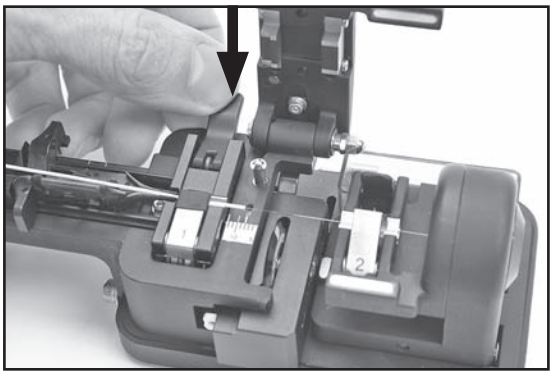


3.8 Place fiber in angle cleaver so that the coating edge is at 8.0 ± 0.5 mm.

***Note: Make sure that the natural bow in the fiber is facing down and laying properly in the bottom of V-groove in both cleaver clamps 1 & 2.***

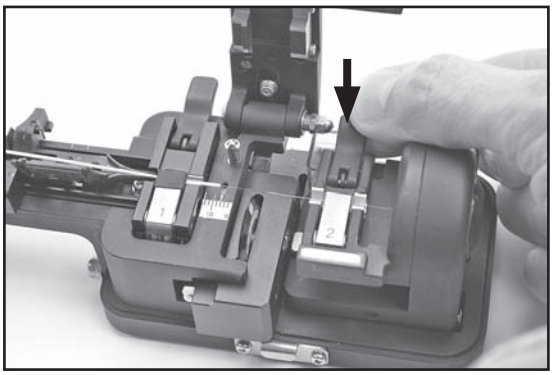


3.9 Close the cleaver clamp #1 first. This process sets the appropriate cleave length.

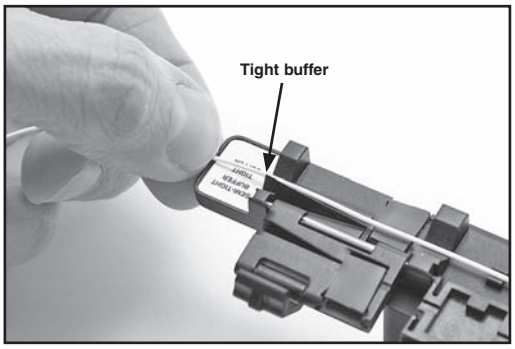


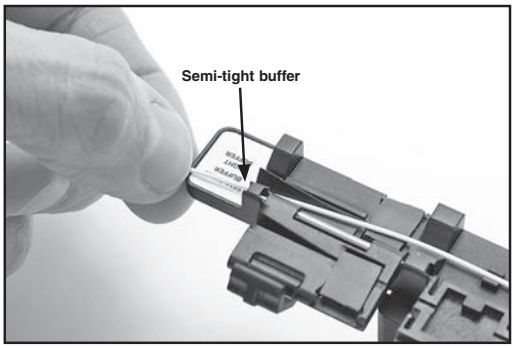
3.10 Close the cleaver clamp #2.

***Note:*** ***Ensure there is no fiber bow between the two clamps. If there is a bow, open both clamps and repeat steps 3.9 and 3.10.***

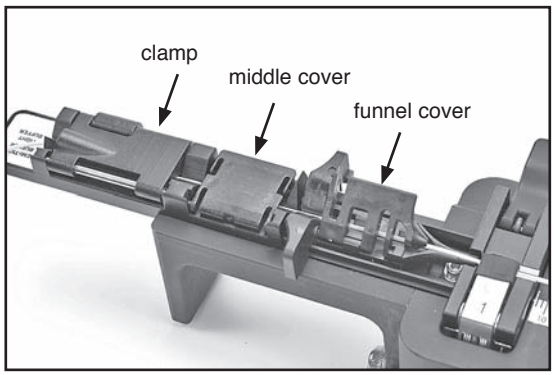


3.11 For 250 µm fiber and tight buffer 900 µm fiber, the fiber should be placed in the fiber holder tool groove which is labeled "Tight buffer". For semi-tight buffer fiber, it should be placed in the groove labeled "Semi-tight buffer". This provides the proper clamping force on the 900 µm buffer.

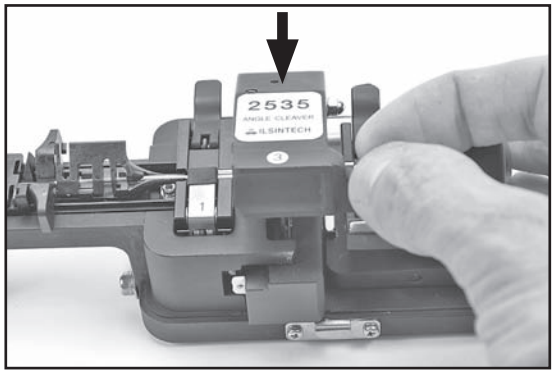



3.12 Close the two covers and the clamp on the fiber holder. The funnel cover will not close completely while in the cleaver. Do not force or cover can break.



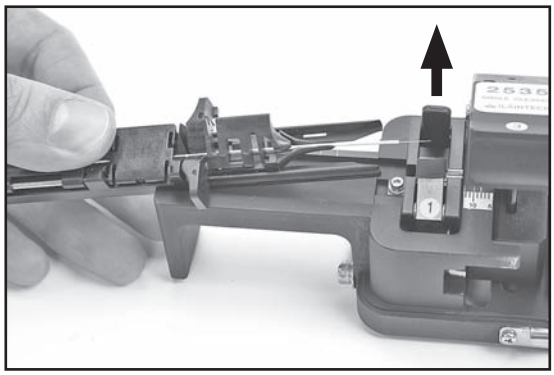

3.13 Depress cleave activation lever (#3) and hold it down until clamp #2 slide assembly has fully moved to the right, indicating that the angle cleave is complete.



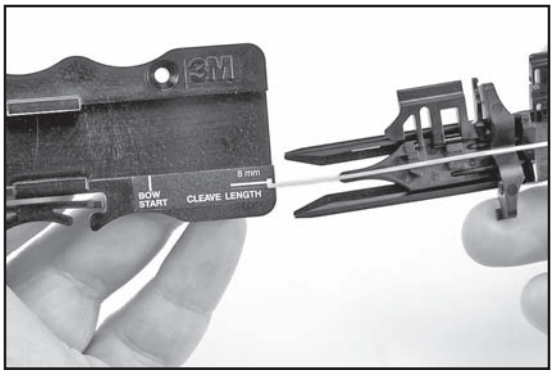

***Note: If fiber does not break immediately upon activation, or it breaks so that the cleave length is not 8 mm, then open clamps and carefully clean the cleaver clamps with a brush and alcohol-soaked lint-free cloth. Cut exposed fiber and strip, clean and cleave again. If issues persist, rotate cleaver blade to the next position using the supplied wrenches and try again.***

3.14 Open cleaver clamp #1 and remove fiber holder and fiber from cleaver.

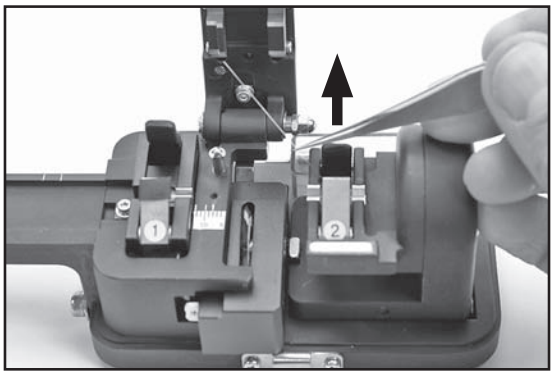
***Note:*** ***Do not open activation lever after cleaving until fiber holder and fiber have been removed.***



3.15 Verify the 8 mm cleave length again by using the length gauge on the assembly base. The 8 mm cleave length is measured from the end of the 900 µm buffer to the end of the cleaved fiber. On semi-tight buffer fiber, the 250 µm coating may protrude 1 mm past the 900 µm semi-tight buffer. Re-strip, clean and cleave the fiber if necessary to meet length requirements.

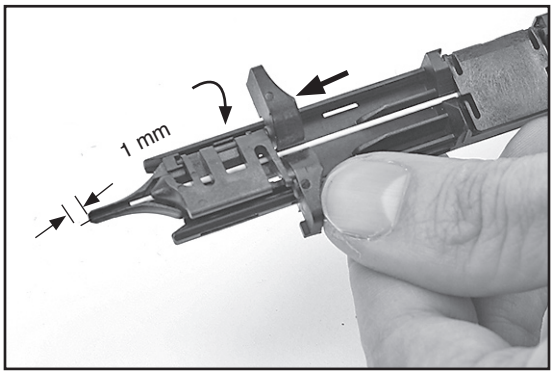



3.16 Open activation lever #3 and clamp #2 of angle cleaver. Dispose of fiber shard per company practice.

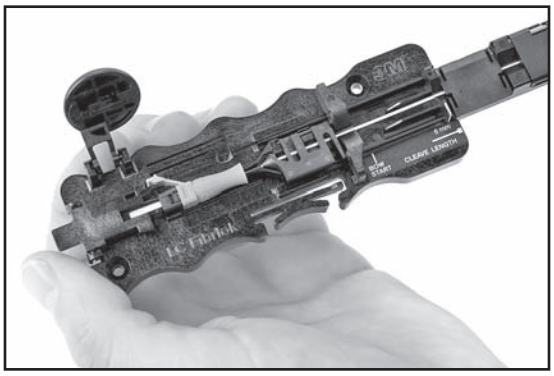



## 4.0 Fiber Insertion

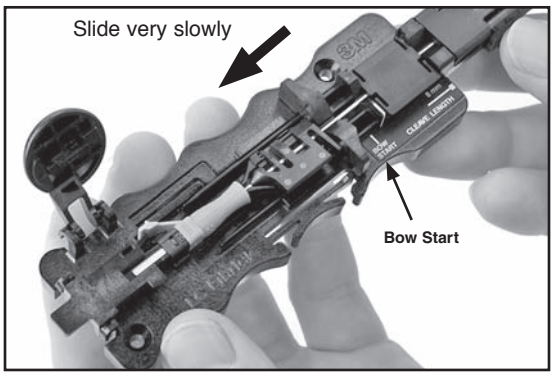
4.1 Slide the fiber holder's guide funnel fully forward and close the funnel cover. An audible click can be heard. Check for proper cleave length again by inspecting the amount of fiber protruding beyond the funnel end of the holder. The amount of exposed fiber should be from 0 to 1 mm (0.04").




4.2 Place fiber holder in the assembly tool base.

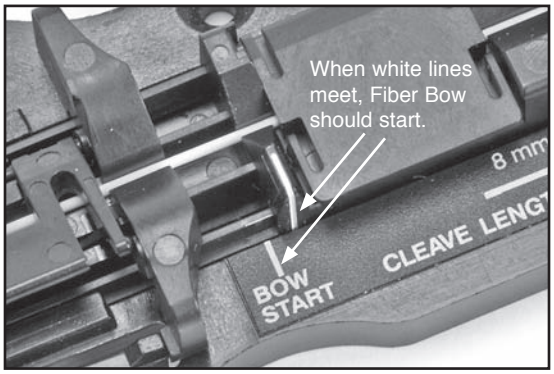


4.3 VERY SLOWLY slide the fiber holder towards the connector. A bow in the fiber is started once the white line on the fiber holder is even with the white line (BOW START) on the base. If a bow is not seen, strip, clean and cleave the fiber as shown in Section 3 and try installation again.

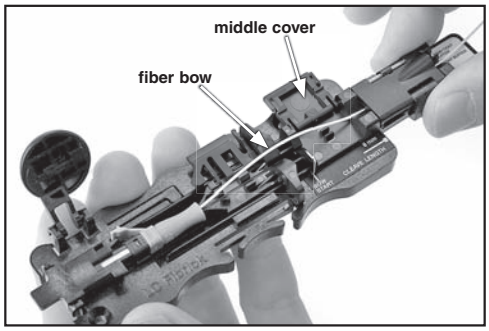



***Note: See photo in 4.4 for more detail.***

4.4 If a bow is seen before the white line on the holder meets the white line on the base, then strip, clean, and cleave the fiber as shown in Section 3 and try again.

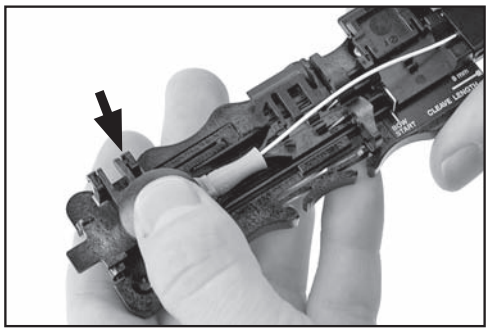


4.5 When the fiber holder is pushed toward the connector and stops, the fiber bow should be seen as below. The fiber will bow and lift the middle cover for rigid fibers and remain closed for 250 µm and flexible 900 µm fibers.

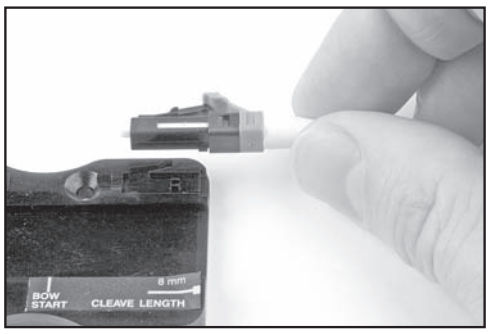


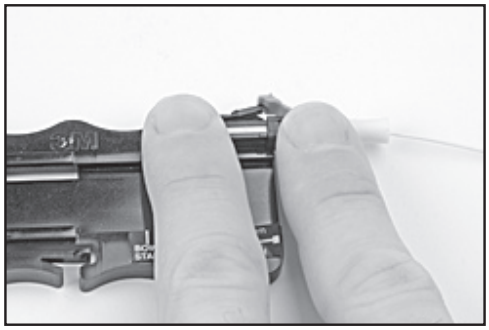

## 5.0 Splice Actuation

5.1 While there is a fiber bow, press actuator button firmly to actuate the splice. An audible click will be heard when properly completed.

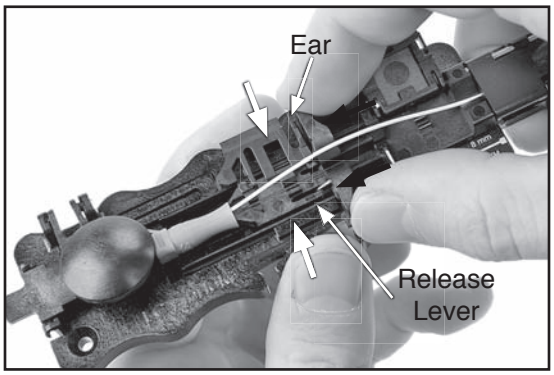


5.2 OPTIONAL STEP: If the connector needs to be tested, and potentially re-used, this is the best time in the assembly sequence to do so. Remove the connector from the tool. Test. Then either (A) place the connector in the cap popper cavity of the base. Press down firmly to pop the cap upward, which opens the splice element. Then remove the fiber, and restart with fiber preparation on step 3.3. or (B) re-insert the connector and fiber back in the tool and continue with step.

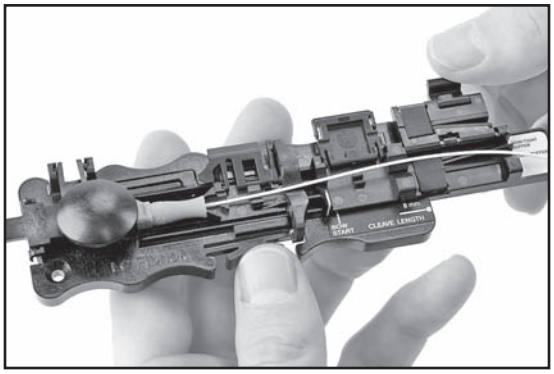


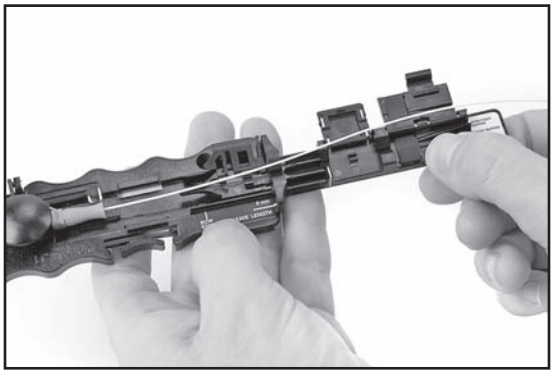
5.3 Press release lever to allow forward motion of funnel. Push ears to move funnel forward and actuate buffer clamp.



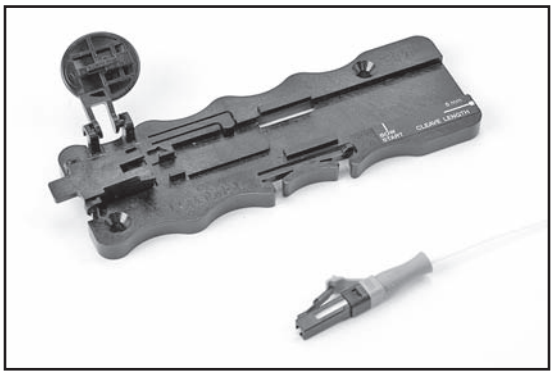

5.4 Open the clamp and lift the covers to release fiber.



5.5 Slide fiber holder from actuation tool.



5.6 Remove connector from receptacle.

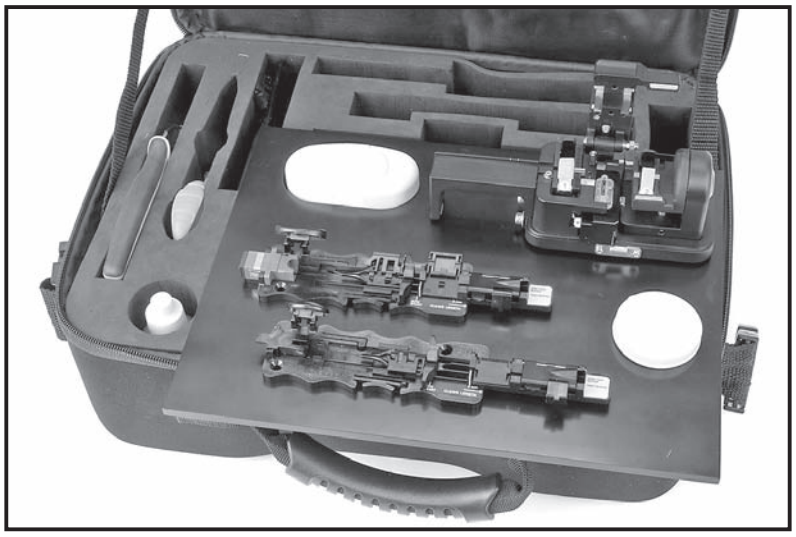


| 3M™ No Polish Connector, Kit and Tool Descriptions | | Packaging |
|---|---|---|
| 8830-APC/AS* | No Polish Connector LC/APC SM Angle Splice, 250 / 900 µm (green trigger, green boot) | 60/package |
| 2565 | Fiber Optic Angle Cleave Kit | 1/package |
| 2535 | Fiber Optic Angle Cleaver | 1/package |
| 8835-AT | No Polish Connector Assembly Tool | 1/package |

*Every box of 60 contains an 8865-AT Tool.

| 3M™ Fiber Optic Angle Cleave Kit 2565 Contents | |
|---|---|
| 2535 | Fiber Optic Angle Cleaver with brush, tweezers, maintenance parts and spare rubber pads |
| 2501-AS | 3M™ Fibrlok™ Angle Splice Assembly Tool |
| 8835-AT | No Polish LC Connector Assembly Tool |
| 8865-AT | No Polish SC Connector Assembly Tool |
| 6365-ST | Fiber Stripping Tool |
| 6365-KS | Kevlar Snips |
| | Lint-Free Cloths, Cleaning Alcohol Bottle, Work Plate, Fiber Shard Container |
| 8800-APC/AS & 8830-APC/AS* | No Polish SC & LC/APC Connector SM, Angle Splice, 250/900 µm (2 ea.) |
| 2529-AS | Fibrlok™ II Angle Fiber Splice (6 ea.) |
| 2540-AS | Fibrlok™ 250 µm Angle Fiber Splice (5 ea.) |

*"RoHS Compliant 2002/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. This information represents 3M's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.



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